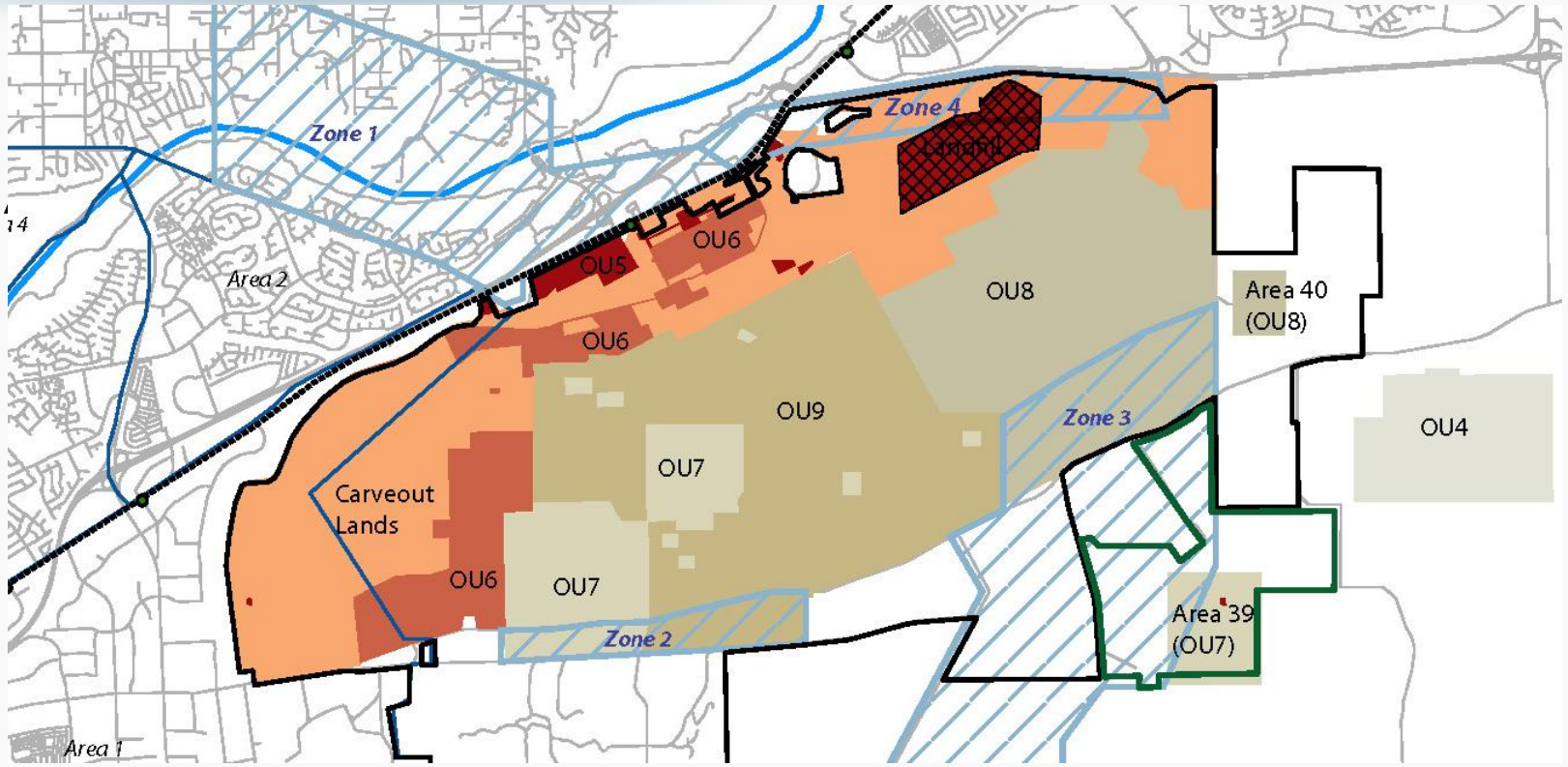
Aerojet Boundary Operable Unit Proposed Plan Preview

Community Advisory Group Meeting

April 17, 2013

Operable Units



Note: All boundaries are approximate.

Key

General Features

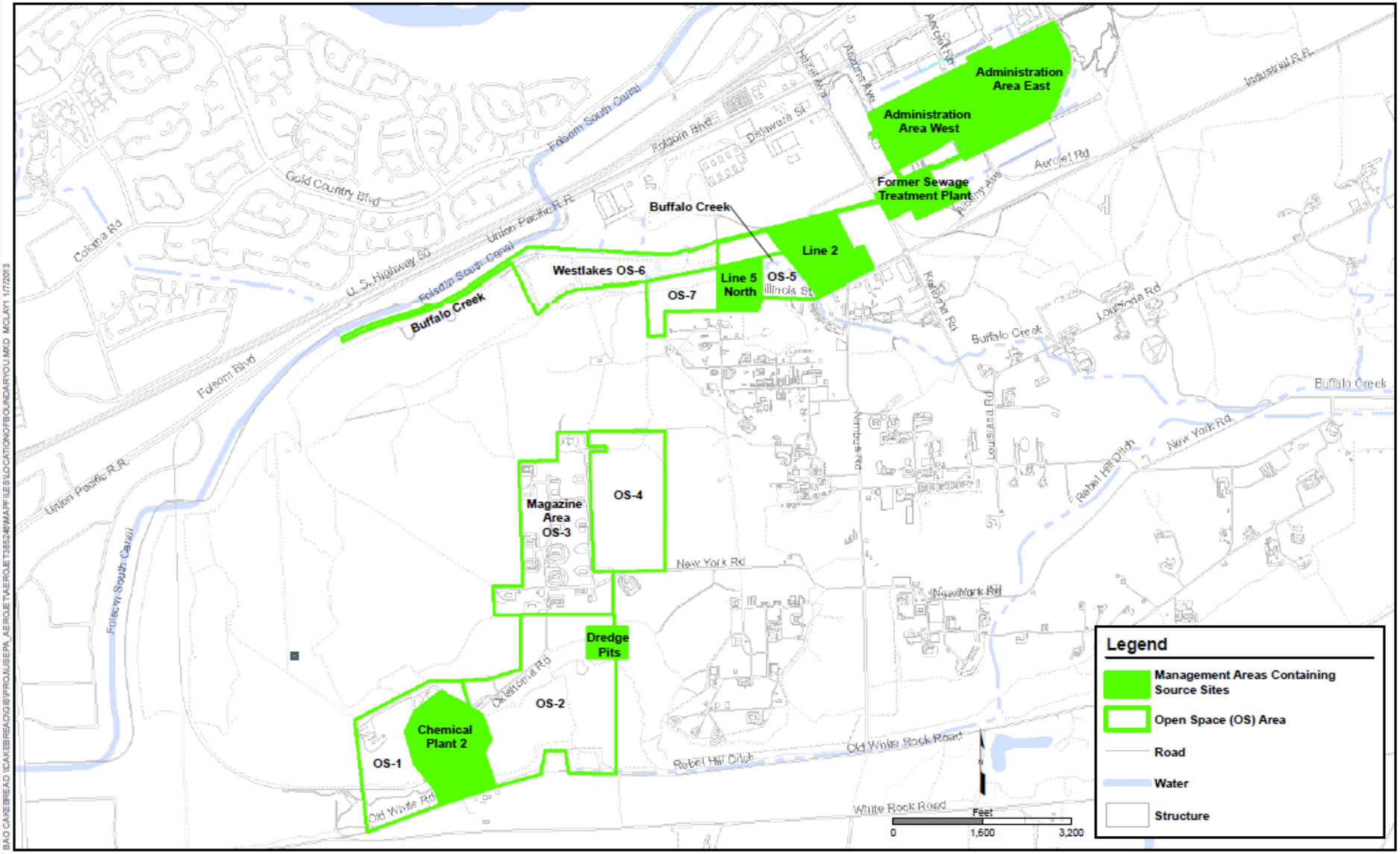
- Aerojet Property Boundary
- State Parks Property Boundary
- Roads
- Light Rail
- American River
- Landfill
- Carveout Lands

Operable Unit Boundaries

- OU5 Perimeter Groundwater *(Groundwater Medium; divided into Zones 1-4)*
- OU5 Perimeter Groundwater *(Soil Medium)*
- OU6 Boundary
- OU3 Western Groundwater *(divided into Areas 1-4)*
- OU4 Cavitt Ranch
- OU7 Island
- OU8 Eastern
- OU9 Central

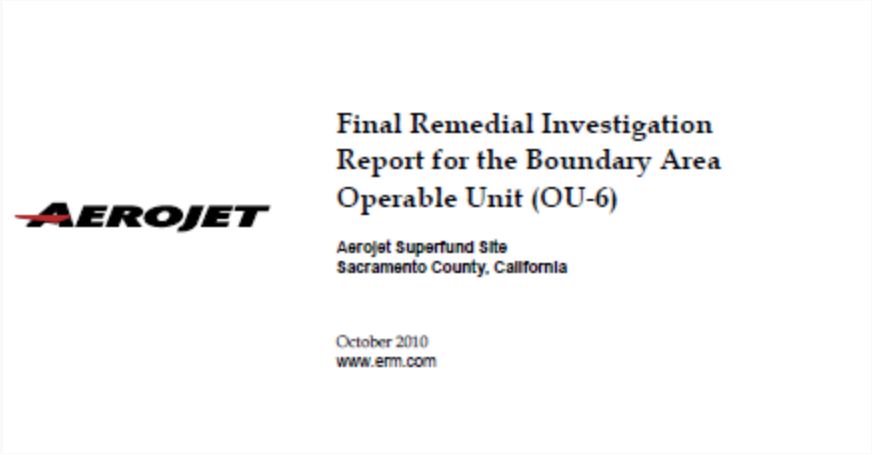
Aerojet OU6 Reuse Assessment

Management Areas



Remedial Investigation (2010)

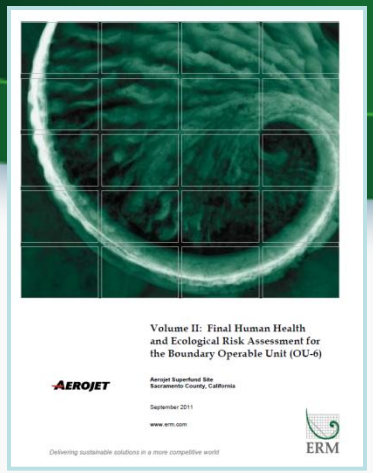
Characterized the nature and extent of chemicals released from past operations


AEROJET

Final Remedial Investigation Report for the Boundary Area Operable Unit (OU-6)

Aerojet Superfund Site
Sacramento County, California

October 2010
www.erm.com

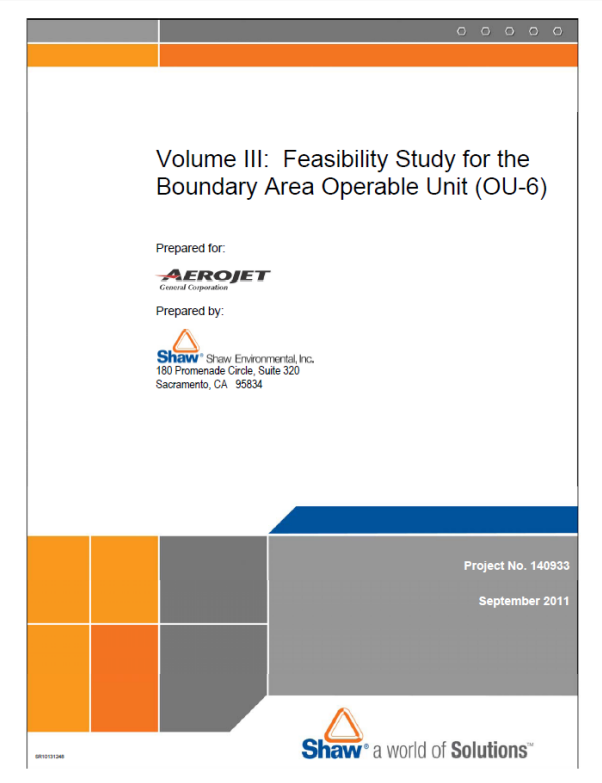


Risk Assessment (2011)

Evaluated the potential exposure of receptors to soil, sediment, surface water, and soil vapor

Included use of untreated groundwater for residential supply and the potential for migration of VOC from groundwater into indoor and ambient air, under both current and future land-use scenarios.

Feasibility Study (2012)

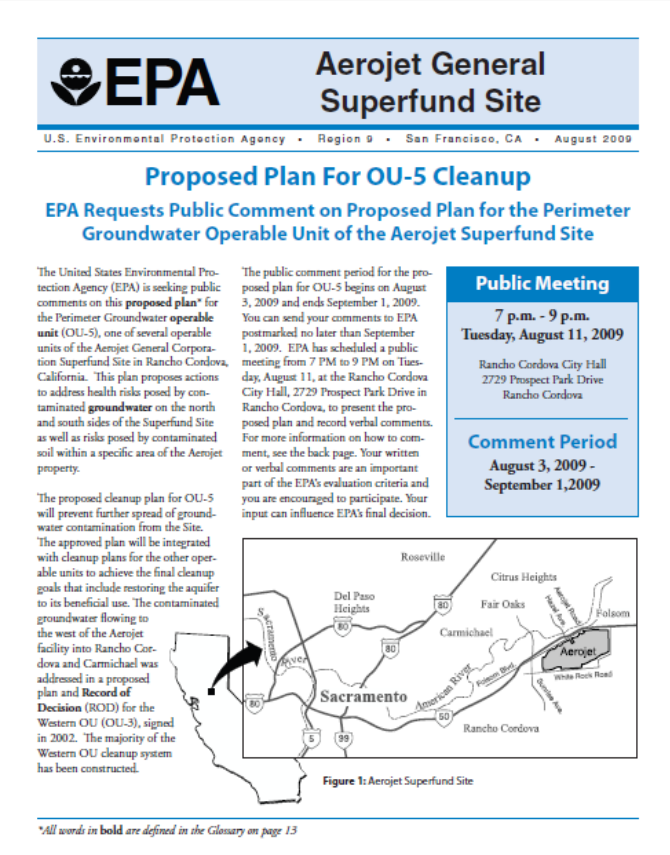


Evaluated potential remedies to eliminate or reduce potential for human or ecological receptors to be exposed to chemicals at an unacceptable risk under current and future reuse conditions

Develops remedies to protect beneficial uses of groundwater

Proposed Plan

- Will present EPA's Preferred Alternative for formal public hearing and comment
- Prior Aerojet Site Proposed Plans
  - Western Groundwater Operable Unit
  - Perimeter Groundwater Operable Unit



EPA

Aerojet General Superfund Site

U.S. Environmental Protection Agency • Region 9 • San Francisco, CA • August 2009

Proposed Plan For OU-5 Cleanup

EPA Requests Public Comment on Proposed Plan for the Perimeter Groundwater Operable Unit of the Aerojet Superfund Site

The United States Environmental Protection Agency (EPA) is seeking public comments on this **proposed plan*** for the Perimeter Groundwater **operable unit** (OU-5), one of several operable units of the Aerojet General Corporation Superfund Site in Rancho Cordova, California. This plan proposes actions to address health risks posed by contaminated **groundwater** on the north and south sides of the Superfund Site as well as risks posed by contaminated soil within a specific area of the Aerojet property.

The proposed cleanup plan for OU-5 will prevent further spread of groundwater contamination from the Site. The approved plan will be integrated with cleanup plans for the other operable units to achieve the final cleanup goals that include restoring the aquifer to its beneficial use. The contaminated groundwater flowing to the west of the Aerojet facility into Rancho Cordova and Carmichael was addressed in a proposed plan and **Record of Decision** (ROD) for the Western OU (OU-3), signed in 2002. The majority of the Western OU cleanup system has been constructed.

The public comment period for the proposed plan for OU-5 begins on August 3, 2009 and ends September 1, 2009. You can send your comments to EPA postmarked no later than September 1, 2009. EPA has scheduled a public meeting from 7 PM to 9 PM on Tuesday, August 11, at the Rancho Cordova City Hall, 2729 Prospect Park Drive in Rancho Cordova, to present the proposed plan and record verbal comments. For more information on how to comment, see the back page. Your written or verbal comments are an important part of the EPA's evaluation criteria and you are encouraged to participate. Your input can influence EPA's final decision.

Public Meeting

7 p.m. - 9 p.m.
Tuesday, August 11, 2009

Rancho Cordova City Hall
2729 Prospect Park Drive
Rancho Cordova

Comment Period

August 3, 2009 - September 1,2009

Figure 1: Aerojet Superfund Site

All words in* ***bold* *are defined in the Glossary on page 13*

Remedial Action Objective #1

- Prevent exposure to COCs in soils that pose an unacceptable risk for present and future workers and residents, and ecological receptors on the property.

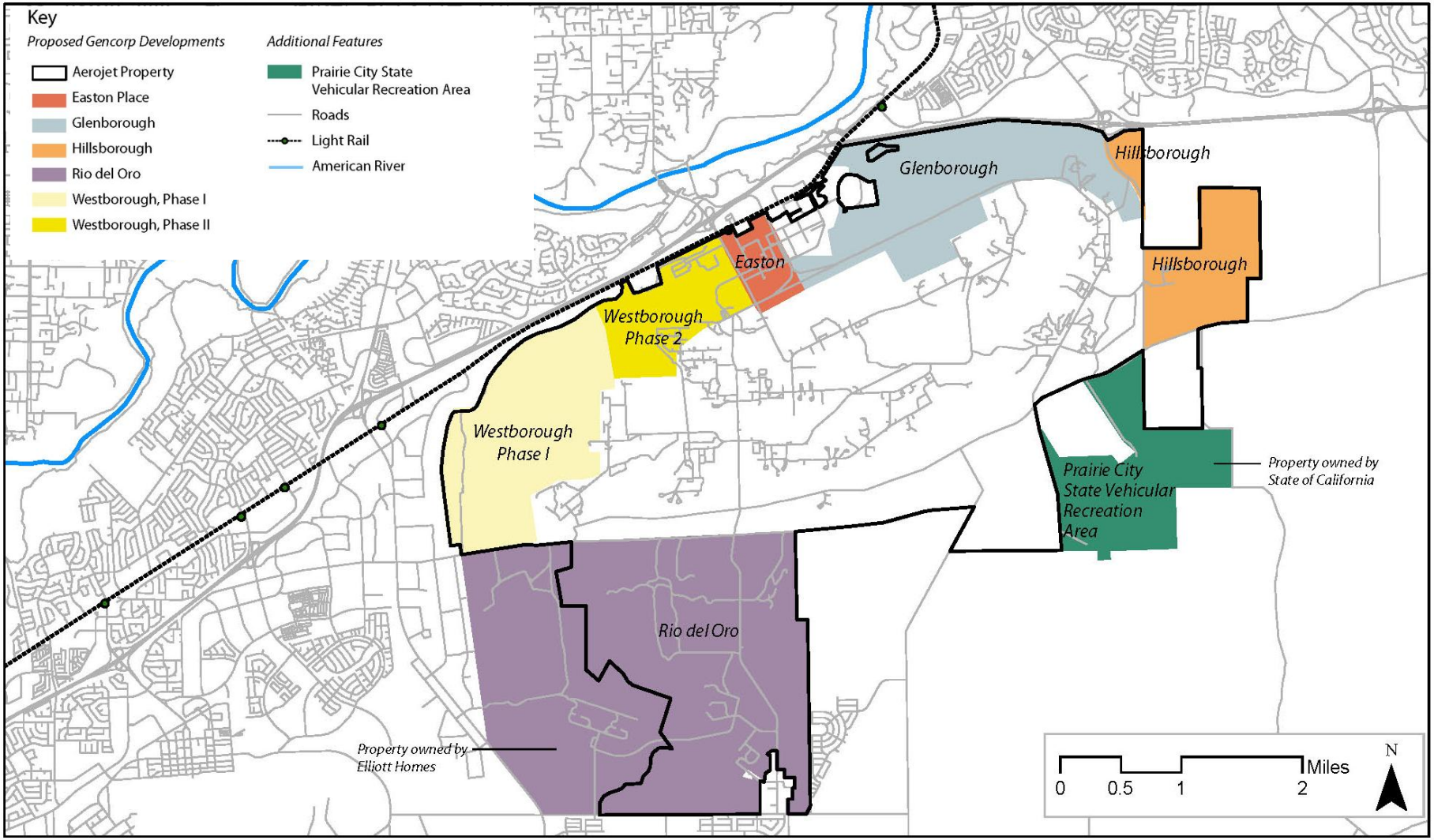
Remedial Action Objective #2

- Prevent migration of COCs to groundwater that could impair beneficial uses and to be consistent with current and future sitewide groundwater remedies.

Remedial Action Objective #3

- Prevent exposure to VOCs in ambient air at levels exceeding the EPA health-based ambient air screening levels for the current and planned future land use.

Ownership & Proposed Use



Note: All boundaries are approximate.

Human Health Chemicals of Potential Concern

Area	Groundwater	Soil Vapor	Soil
Administration Area East Administration Area West	X	PCE TCE Vinyl Chloride Benzene 2-propanol	PCB Metals PAH 1,1,2,2-PCA
Line 2 Region/OS5	X	TCE	Metals PAH
Line 5 N/OS7	X	PCE TCE	--
Buffalo Creek	X	--	Metals
Westlakes/OS6	--	--	--
Magazine Area/OS3	--	X	--
Chemical Plant 2 OS1/OS2/OS4 Dredge Pit and Eastern Basin	X	1,2-DCA Vinyl Chloride	PCB PCP PAH Metals Prowl
Area 39	--	PCE TCE 1,1-DCE	Metals Dioxin

Protection of Ground Water Chemicals of Potential Concern

Area	Soil Vapor	Soil	
Administration Area East Administration Area West	PCE TCE Vinyl Chloride Benzene 2-propanol	PCB Metals PAH	Perchlorate TPH-D TPH-MO
Line 2 Region/OS5	TCE	Metals PAH Perchlorate	NDMA TPH-D TPH-MO
Line 5 N/OS7	PCE TCE	Metals PAH Perchlorate	TPH-D TPH-MO
Buffalo Creek	--	PCB	
Westlakes/OS6	--	PCB PAH	Perchlorate
Magazine Area/OS3	X	Metals	Perchlorate
Chemical Plant 2 OS1/OS2/OS4 Dredge Pit and Eastern Basin	1,2-DCA Vinyl Chloride	PCB PCP PAH Metals	Perchlorate Pesticides Prowl
Area 39	PCE TCE 1,1-DCE	Metals Perchlorate	

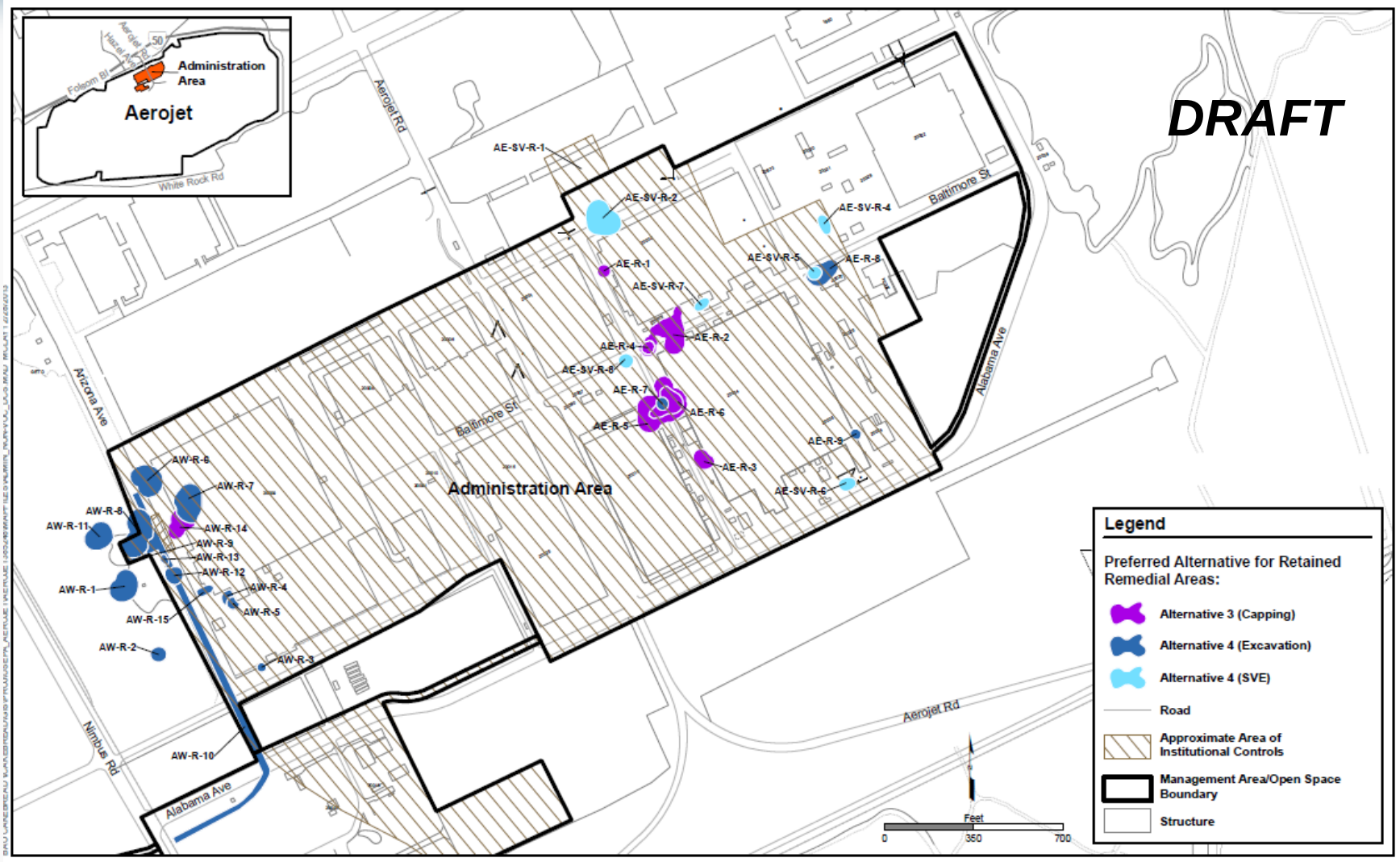
Remedial Technologies

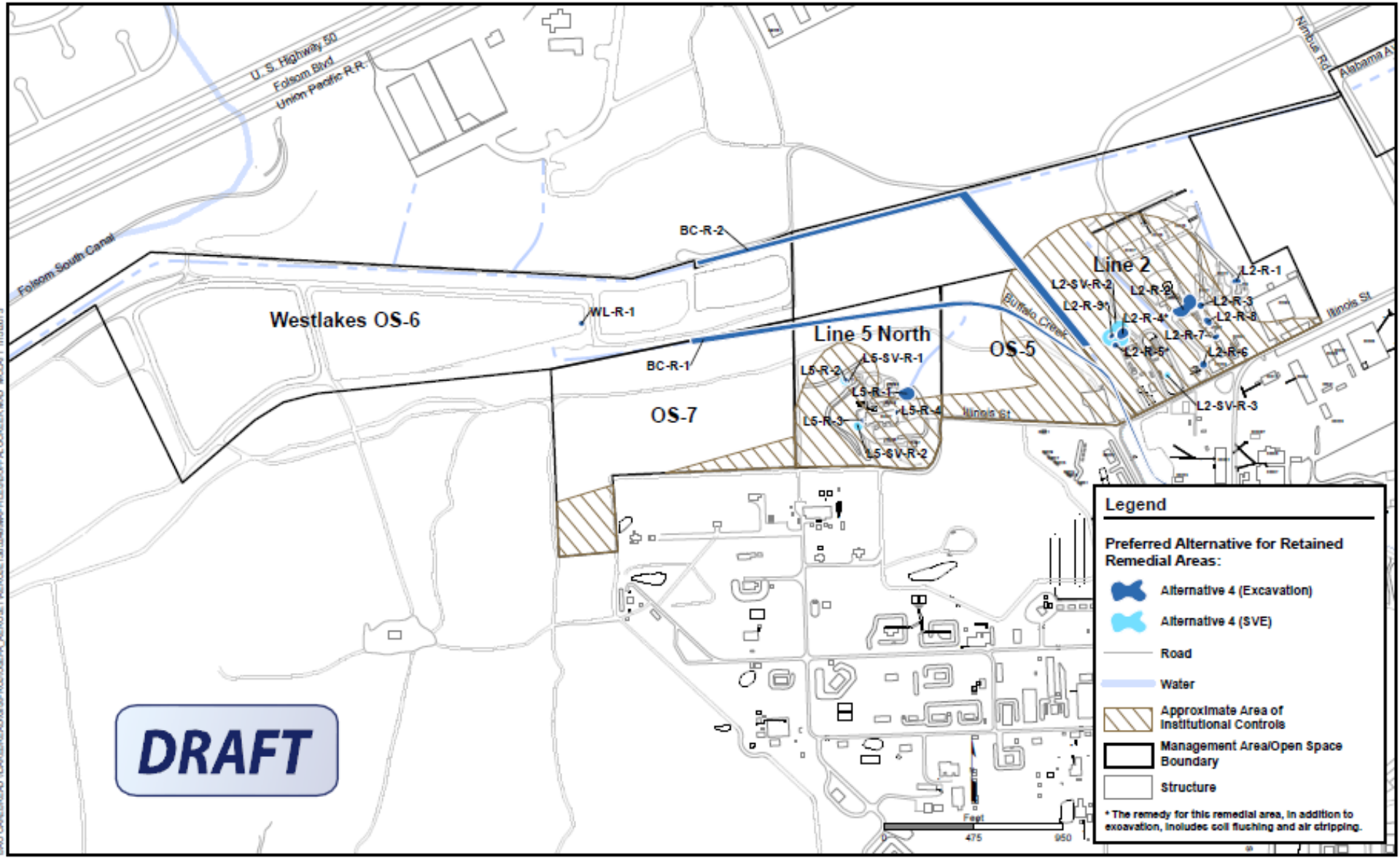
1. No Action
2. Institutional Controls (ICs)
3. Containment
4. Source Reduction and Removal

TABLE 3
Evaluation of Alternatives

Criteria	Alternative 1 No Action	Alternative 2 Institutional Controls	Alternative 3 Containment/ Operational Controls	Alternative 4 Source Removal/ Reduction
Overall Protection of Human Health and the Environment	○ May be protective for areas with low risk.	● Not protective of groundwater for retained areas with identified risk to groundwater.	● Risk of exposure would be reduced or eliminated.	● Risk would be reduced. Is the most protective.
Compliance with ARARs	○ May comply for areas with limited contamination.	● May not comply for retained areas with identified risk to groundwater or with PCB contamination.	● May not comply for retained areas with identified risk to groundwater or with PCB contamination.	● Would comply.
Long-Term Effectiveness and Permanence	○ None	◉ Relies on institutional controls alone to prevent exposure.	● Engineered barriers and institutional controls would prevent exposure.	● Risk would permanently be reduced through removal.
Reduction of Toxicity, Mobility, or Volume through Treatment	○ Would not satisfy the preference for treatment.	○ Would not satisfy the preference for treatment.	○ Would not satisfy the preference for treatment.	◉ SVE would satisfy the preference for treatment.
Short-Term Effectiveness	NA	● No short-term risks to workers or the community.	● Short-term risks to workers and/or the community could be managed.	● Short-term risks to workers and/or the community could be managed.
Implementability	NA	●	●	●
Cost (Present Worth 30 Years)	$0	$100,000 for Boundary OU	Admin Area = $5.16M WLLO = $0.18M Magazine Area = NA Chemical Plant 2 = $0.15M	Admin Area = $4.50M WLLO = $4.76M Magazine Area = NA Chemical Plant 2 = $0.97M
State Acceptance	CA Department of Toxic Substance Control & CA Central Valley Regional Water Quality Control Board concurred with EPA's preferred alternatives.			
Community Acceptance	Community acceptance of the preferred alternatives will be evaluated after the public comment period.			

● = Meets Criterion ◉ = Partially meets criterion ○ = Does not meet criterion


DRAFT
Administration Area
Aerojet
Aerojet Rd
Baltimore St
Arizona Ave
Alabama Ave
Nimbus Rd
White Rock Rd
Folsom Blvd
Hazel Ave
AE-SV-R-1
AE-SV-R-2
AE-SV-R-4
AE-SV-R-5
AE-SV-R-7
AE-SV-R-8
AE-SV-R-6
AE-R-1
AE-R-2
AE-R-3
AE-R-4
AE-R-5
AE-R-6
AE-R-7
AE-R-8
AW-R-1
AW-R-2
AW-R-3
AW-R-4
AW-R-5
AW-R-6
AW-R-7
AW-R-8
AW-R-9
AW-R-10
AW-R-11
AW-R-12
AW-R-13
AW-R-14
AW-R-15
Legend
Preferred Alternative for Retained Remedial Areas:
Alternative 3 (Capping)
Alternative 4 (Excavation)
Alternative 4 (SVE)
Road
Approximate Area of Institutional Controls
Management Area/Open Space Boundary
Structure
Feet
0
350
700


U.S. Highway 50
Folsom Blvd
Union Pacific R.R.
Folsom South Canal
BC-R-2
WL-R-1
Westlakes OS-6
BC-R-1
OS-7
Line 5 North
L5-SV-R-1
L5-R-2
L5-R-1
L5-R-4
L5-R-3
L5-SV-R-2
OS-5
Buffalo Creek
Illinois St
Line 2
L2-SV-R-2
L2-R-9*
L2-R-2
L2-R-4*
L2-R-5*
L2-R-1
L2-R-3
L2-R-8
L2-R-7
L2-R-6
L2-SV-R-3
Nimbus Rd
Alabama A
DRAFT
Legend
Preferred Alternative for Retained Remedial Areas:
Alternative 4 (Excavation)
Alternative 4 (SVE)
Road
Water
Approximate Area of Institutional Controls
Management Area/Open Space Boundary
Structure
* The remedy for this remedial area, in addition to excavation, includes soil flushing and air stripping.
Feet
0
475
950

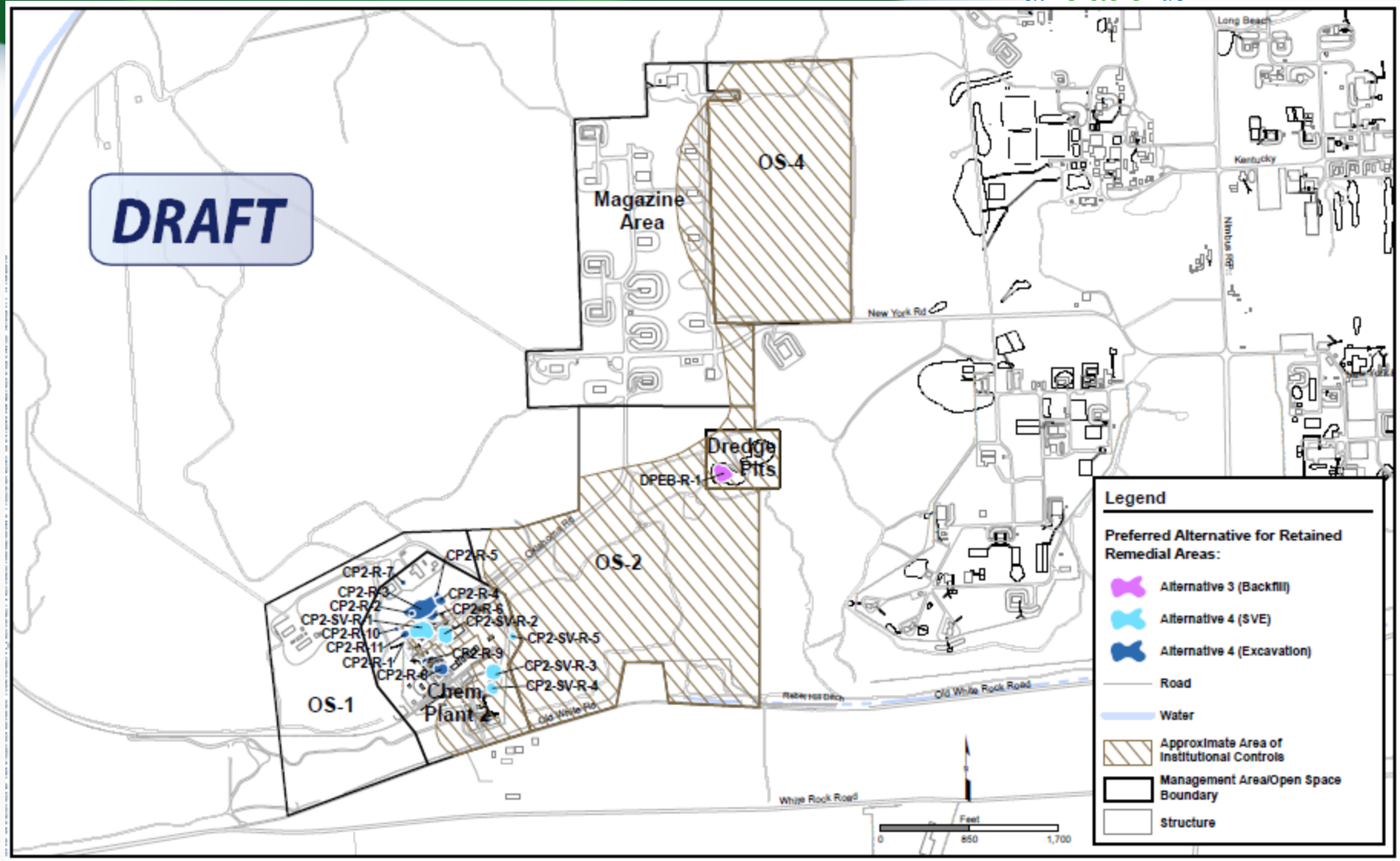


FIGURE 5: Chemical Plant 2 and Magazine Area Retained Remedial Areas

Path Forward

- Inclusion of feedback into Proposed Plan
- Proposed Plan mailing May 1, 2013
- Public Hearing May 15, 2013
- Public comment May 8 – June 7, 2013
- EPA prepares Responsiveness Summary
- Record of Decision August 2013

After the Record of Decision

- Enforcement negotiations between EPA and Aerojet
- Aerojet prepares detailed Remedial Design
- Cleanup is implemented
  - Soil excavations likely first
  - Potential phased implementation of SVE
  - Capping and Institutional Controls